CLAIMS

What is claimed is:

1. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of said signal lines and said scanning lines via switching elements; and

a control circuit for controlling said liquid crystal panel via said signal lines and said scanning lines, and for performing impulse driving to activate said control signals, which are to be transmitted to each of said scanning lines, two times per one frame period for displaying one image, wherein:

said liquid crystal panel is divided into first pixel regions and second pixel regions adjacent to said first pixel regions;

said display data are written in said first pixel regions and said reset data are written in said second pixel regions, when said control signals are activated once of said two times, and

said reset data are written in said first pixel regions and said display data are written in said second pixel regions, when said control signals are activated the other time of said two times.

2. A liquid crystal display device according to Claim 1, wherein said first pixel regions and said second pixel regions are divided in the form of stripes along said scanning lines.

3. A liquid crystal display device according to Claim 1, wherein the first pixel regions and the second pixel regions are divided in lattice-like form.

4. A liquid crystal display device according to Claim 1, further comprising backlights on the backside of the liquid crystal panel, each facing said first pixel regions and said second pixel regions, respectively, wherein

each of said backlights is turned on in synchronization

with writing said display data in said first pixel regions and in said second pixel regions, and each of said backlights is turned off in synchronization with writing said reset data in said first pixel regions and in said second pixel regions.

5. A liquid crystal display device according to Claim 4, wherein said backlights comprise light-emitting diodes, or fluorescent tubes, or a plasma display panel.

6. A liquid crystal display device according to Claim 4, wherein:

said backlights comprise fluorescent tubes;

said one frame cycle is adjusted in accordance with a cycle of an alternating current signal supplied to the fluorescent tubes; and

said display data is written in accordance with the peak of brightness of said fluorescent tubes.

7. A liquid crystal display device according to Claim 1, wherein

light guide plates are arranged on the backside of said liquid crystal panel, each facing said first pixel regions and said second pixel regions, and

a fluorescent tube is arranged at one end of each of said light guide plates.

8. A liquid crystal display device according to Claim 1, wherein said control circuit receives said display data for two images per frame, and

displays the data deleting data corresponding to said first pixel regions and said second pixel regions for writing the reset data, of said display data.

9. A liquid crystal display device according to Claim 1, wherein:

said control circuit receives said display data for one image per frame;

writes a portion of said display data in said first pixel regions when said control signals are activated at once of said two times; and

writes the remaining display data in said second pixel regions when said control signals are activated the other time

of said two times.

10. A liquid crystal display device according to Claim 1, having a hold driving function for activating each of said control signals once in said one frame period and writing said display data in all said pixel electrodes, and wherein

said control circuit controls switching between said hold driving to said impulse driving, depending on an image to be displayed.

11. A liquid crystal display device according to Claim 10, comprising:

a backlight in which brightness can be adjusted arranged on the backside of said liquid crystal panel, and wherein

said impulse driving is carried out by increasing brightness of said backlight.

12. A liquid crystal display device according to Claim 10, wherein gamma correction is carried out during said impulse driving and during said hold driving, and

said gamma correction during said impulse driving is carried out more rapidly than said gamma correction during said hold driving.

13. A liquid crystal display device according to Claim 1, wherein said control circuit selects said scanning lines according to an order the scanning lines are arranged in.

14. A liquid crystal display device according to Claim 1, wherein said control circuit selects said scanning lines according to a predetermined order which is not related to an order said scanning lines are arranged in.

15. A liquid crystal display device according to Claim 14, wherein

said first pixel regions and said second pixel regions are divided, each including a plurality of said scanning lines, and

said control circuit selects said scanning lines according to the order said scanning lines are arranged in, in said first pixel regions and said second pixel regions.

16. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal

lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements; and

a control circuit for carrying out gamma correction in response to a temperature change of said liquid crystal panel.

17. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements;

a plurality of first backlights arranged on the backside of said liquid crystal panel and separated from each other; and

a plurality of second backlights each adjacent to said first backlights but separated from each other, wherein

said first backlights and said second backlights are alternately turned on and off.

18. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements;

a plurality of backlights on the backside of said liquid crystal panel arranged along said scanning lines; and

a control circuit for controlling said scanning lines and turning on and off said backlights in synchronization with a scanning period of said scanning lines.

19. A liquid crystal display device according to Claim 18, wherein:

said control circuit turns on said backlights facing said scanning lines when the scanning lines are not scanned;

and

turns off said backlights immediately before said scanning lines are scanned.

20. A liquid crystal display device according to Claim 18, wherein:

said liquid crystal panel is divided into regions comprised of a plurality of said scanning lines adjacent to each other;

said backlights are arranged each facing said regions; and

said control circuit turns on said backlights facing each of said regions in a predetermined time after the last of said scanning lines in each of the regions has been scanned, and turning off the backlights before the first of the scanning lines in each of the regions is scanned.

21. A liquid crystal display device according to Claim 20, wherein said control circuit sets said predetermined time to a time equal to or longer than 1/2 of one frame period, which is the time it takes to scan all of said scanning lines once.

22. A liquid crystal display device according to Claim 20, wherein a response time of said liquid crystal panel is shorter than said predetermined time for all gradations which can be displayed.

23. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements;

a light guide plate facing said liquid crystal panel; and

a backlight arranged at one end of said light guide plate and supplying light to said light guide plate along said scanning lines, wherein

said light guide plate comprises a plurality of luminescent parts disposed along said scanning lines, for

collecting light guided therein and emitting the light toward said liquid crystal panel.

24. A liquid crystal display device according to Claim 23, wherein

a plurality of film-like scattering parts are arranged on said light guide plate, along said scanning lines, for totally or irregularly reflecting light penetrating through said light guide plate, and

said luminescent parts are formed by irregular reflection of said light by said scattering parts.

25. A liquid crystal display device according to Claim 24, wherein said scattering parts are arranged in parallel on a surface of said light guide plate.

26. A liquid crystal display device according to Claim 25, wherein each of said scattering parts is arranged on the surface of said light guide plate, on the side of said liquid crystal panel.

27. A liquid crystal display device according to Claim 25, wherein each of said scattering parts is arranged on the surface of said light guide plate, on the opposite side of said liquid crystal panel.

28. A liquid crystal display device according to Claim 25, comprising a plurality of said light guide plates facing each other, wherein each of said scattering parts is arranged between said light guide plates.

29. A liquid crystal display device according to Claim 28, wherein said scattering parts are further arranged on outer surfaces of said light guide plates.

30. A liquid crystal display device according to Claim 24, wherein said scattering parts are arranged within said light guide plate, so as to cut across a direction light is guided.

31. A liquid crystal display device according to Claim 30, wherein said scattering parts are arranged orthogonal to said direction light is guided.

32. A liquid crystal display device according to Claim 30, wherein said scattering parts are arranged diagonal to said direction light is guided.

33. A liquid crystal display device according to Claim 24, wherein said scattering parts are formed with a liquid crystal film of high-molecular type.

34. A liquid crystal display device according to Claim 33, wherein a resin layer covering low molecular liquid crystal in said liquid crystal film is formed with high-molecular liquid crystal.

35. A liquid crystal display device according to Claim 34, wherein said low molecular liquid crystal and said high-molecular liquid crystal are aligned orthogonal to a surface of said liquid crystal film in a state where voltage is not supplied thereto.

36. A liquid crystal display device according to Claim 35, wherein said low molecular liquid crystal has negative dielectric anisotropy.

37. A liquid crystal display device according to Claim 34, wherein said low molecular liquid crystal and said high-molecular liquid crystal are aligned orthogonal to a direction light is guided in a state where a voltage is not supplied thereto.

38. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines via switching elements, wherein

a luminescent period in which an image to be displayed in one frame period is output is adjusted manually.

39. A liquid crystal display device according to Claim 38, wherein brightness of said liquid crystal panel is kept constant in cooperation with controlling of said luminescent period.

40. A liquid crystal display device according to Claim 39 further comprising a backlight facing said liquid crystal panel, wherein

said brightness is controlled by adjusting brightness

of said backlight.

41. A liquid crystal display device according to Claim 39, wherein said brightness is controlled by adjusting the amount of display data signal to be written in said pixel electrodes.

42. A liquid crystal display device according to Claim 38, further comprising a backlight facing the liquid crystal panel, wherein

said luminescent period is adjusted by on-off controlling said backlight.

43. A liquid crystal display device according to Claim 38, wherein

impulse driving, in which each of said scanning lines is scanned twice in one frame period and said display data and a reset data are written in said pixel electrodes, is carried out, and

said luminescent period is adjusted by a display period of said display data.

44. A liquid crystal display device according to Claim 38, further comprising a shutter facing said liquid crystal panel, wherein said luminescent period is adjusted by opening and closing said shutter.

45. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines via switching elements; wherein

a luminescent period in which a display image in one frame period is output is adjusted in accordance with a speed of motion of an image displayed on said liquid crystal panel.

46. A liquid crystal display device according to Claim 45, wherein a display image is judged to be a moving image and said luminescent period is adjusted in accordance to said moving image, when estimated motion of a DC component in DCT (Discrete Cosine Transform) exceeds a size of a block comprising a predetermined pixel matrix.

47. A liquid crystal display device according to Claim 45, further comprising a backlight facing the liquid crystal panel, wherein said luminescent period is adjusted by on-off controlling said backlight.

48. A liquid crystal display device according to Claim 45, wherein

impulse driving, in which each of said scanning lines is scanned twice in one frame period and said display data and a reset data are written in said pixel electrodes, is carried out, and

said luminescent period is adjusted by a display period of said display data.

49. A liquid crystal display device according to Claim 45, further comprising a shutter facing said liquid crystal panel, wherein said luminescent period is adjusted by opening and closing said shutter.

50. A liquid crystal display device comprising a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines via switching elements,

the device having a hold control function in which an image to be displayed is output in one entire frame period and an impulse control function in which an image to be displayed is output in a predetermined period within one frame period, wherein:

said hold control is carried out when said display image is a still image; and

said impulse control is carried out when said display image is a moving image.

51. A liquid crystal display device according to Claim 50, wherein said hold control is switched to said impulse control in the case where a ratio of said moving image to all of said display data exceeds a predetermined value.

52. A liquid crystal display device according to Claim 50,

wherein said displayed data are judged to be of said moving image and said hold control is switched to said impulse control, when said displayed data makes changes for over a period of two or more frames.

53. A liquid crystal display device according to Claim 50, further comprising a shutter facing said liquid crystal panel, wherein said impulse control is carried out by opening and closing the shutter.

54. A liquid crystal display device according to Claim 50, wherein said impulse control is carried out by scanning each of said scanning lines twice per one frame period and writing said display data and reset data in said pixel electrodes.

55. A liquid crystal display device according to Claim 50 further comprising a backlight facing said liquid crystal panel, wherein brightness of said backlight is increased in said impulse control than in said hold control.

56. A liquid crystal display device according to Claim 55, wherein brightness of said display image output is made to be the same between said impulse control and said hold control.

57. A liquid crystal display device according to Claim 50, wherein said switching elements are polysilicon TFTs (Thin Film Transistors).

58. A liquid crystal display device according to Claim 50, wherein said display image is judged to be said moving image when a ratio of pixels of said display image in one frame which changed in comparison to pixels in an immediately preceding frame exceeds a predetermined value or more.

59. A liquid crystal display device according to Claim 50, wherein:

motion compensation is carried out by using DCT (Discrete Cosine Transform); and

said display image is judged to be said moving image when averages of DC components in each said display image in one frame and said image displayed in an immediately preceding frame differs by a predetermined value or more.

60. A liquid crystal display device according to Claim 50, wherein:

motion compensation is carried out by using DCT (Discrete Cosine Transform); and

said display image is judged to be said moving image when compressed image information includes vector information indicating image motion.

61. A the liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning line via switching elements, the liquid crystal panel comprising a plurality of control blocks divided into n portions ($n \geqq 4$) along said scanning lines; and

a plurality of backlights facing each of said control blocks, wherein

said liquid crystal panel carries out hold driving in which each of said scanning lines is scanned once in one frame period and said display data are written in said pixel electrodes,

said backlights corresponding to each of said control blocks are turned on for a predetermined period immediately before scanning said scanning lines in the control blocks, and

a response time of each pixel in said liquid crystal panel is smaller than:

1 frame period $\times (n-2)/n$.

62. A the liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning line via switching elements, the liquid crystal panel comprising a plurality of control blocks divided into n portions ($n \geqq 3$) along said scanning lines; and

a plurality of backlights facing each of said control blocks, wherein

said liquid crystal panel carries out impulse driving in which each of said scanning lines is scanned twice in one frame period and said display data and reset data are written in said pixel electrodes,

said backlights corresponding to each of said control blocks are turned on for a predetermined period immediately before scanning said scanning lines in the control blocks, and

a response time of each pixel in said liquid crystal panel is smaller than:

1 frame period×[[(n-1)/2n]-(1/n)] (n: odd number), or

1 frame period×[[(n-2)/2n]-(1/n)] (n: even number).

63. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines via switching elements;

a light guide plate arranged facing said liquid crystal panel,

a first polarization splitting sheet, a liquid crystal shutter divided along said scanning lines, a second polarization splitting sheet, and a scattering element, arranged in order on one surface of said light guide plate; and

a light source at one end of said light guide plate for supplying light in said light guide plate along said scanning lines.

64. A liquid crystal display device according to Claim 63, wherein each said polarization splitting sheet is formed with cholesteric liquid crystal.

65. A liquid crystal display device according to Claim 63, wherein each said polarization splitting sheet is formed by stacking a plurality of films having different refractive indices.

66. A liquid crystal display device according to Claim 63, wherein each said polarization splitting sheet is formed with

a prism array comprising a plurality of prisms.

67. A liquid crystal display device according to Claim 63, wherein refractive indices of each said polarization splitting sheet and said liquid crystal shutter are in accordance with a refractive index of said light guide plate.

68. A liquid crystal display device according to Claim 63, further comprising a retardation sheet arranged on the other surface of said light guide plate.

69. A liquid crystal display device according to Claim 63, wherein said scattering element is formed with a plurality of prisms.

70. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and scanning lines for transmitting control signals are laid out vertically and horizontally, and capacitor parts comprising liquid crystals are arranged at intersections of the signal lines and the scanning lines via switching elements, wherein

said liquid crystal panel comprises resistor parts connected to each of said capacitor parts in parallel and having a resistance lower than a resistance of the capacitor parts.

71. A liquid crystal display device according to Claim 70, wherein a maximum voltage supplied to said capacitor parts is equal to or higher than a saturation voltage.

72. A liquid crystal display device according to Claim 70, further comprising a brightness correction circuit for adjusting a supplied voltage for each pixel in order to uniform brightness distribution in said liquid crystal panel.

73. A liquid crystal display device according to Claim 70, wherein said resistor parts are formed with subsidiary capacitance arranged in the liquid crystal panel.

74. A liquid crystal display device according to Claim 73, wherein said subsidiary capacitance is formed with amorphous silicon.

75. A liquid crystal display device according to Claim 73, wherein said subsidiary capacitance is formed with a composite

material of silicon carbonate and silicon nitride.

76. A liquid crystal display device according to Claim 70, wherein a liquid crystal mode of said liquid crystal panel is normally black.

77. A liquid crystal display device comprising a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines, wherein:

each of said pixel electrodes is connected to a first TFT (Thin Film Transistor) and a second TFT having different threshold voltages; and

gate electrodes of said first thin film transistor and said second thin film transistor connected to the pixel electrodes adjacent to each other along the scanning lines, are connected to the same scanning line.

78. A liquid crystal display device according to Claim 77, wherein each of said scanning lines is selected twice at different voltages in one frame period.

79. A liquid crystal display device according to Claim 77, wherein a liquid crystal mode of said liquid crystal panel is normally black.

80. A liquid crystal display device according to Claim 77, wherein:

said first thin film transistor is connected to the signal line and said second thin film transistor is connected to an electrode to which a voltage corresponding to said reset data is supplied; and

the threshold voltage of said second thin film transistor is higher than the threshold voltage of said first thin film transistor.

81. A liquid crystal display device according to Claim 80, wherein said electrode to which voltage corresponding to said reset data is supplied is formed along said signal line.

82. A liquid crystal display device according to Claim 80,

wherein said electrode to which voltage corresponding to said reset data is supplied is formed along said scanning line.

83. A liquid crystal display device according to Claim 80, further comprising a plurality of backlights facing said liquid crystal panel and divided along said scanning lines, wherein said backlights are turned on in response to writing said display data and turned off in response to writing said reset data.

84. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and liquid crystal cells are arranged at intersections of the signal lines and the scanning lines; and

a backlight system facing said liquid crystal panel and having a plurality of luminescent parts divided along said scanning lines, and wherein:

impulse driving in which the luminescent parts are sequentially turned on, and in which said scanning lines corresponding to said luminescent parts are scanned to start writing said display data in said liquid crystal cells when said luminescent parts are turned off is carried out; and

number of said luminescent parts, a ratio of an on-period of the luminescent parts to an off-period within said one frame period, and a response time of said liquid crystal cells are determined so that a change in brightness due to a transient response of the liquid crystal cells after the luminescent parts are turned on is equal to or less than 5% of brightness of said luminescent parts.

85. A liquid crystal display device according to Claim 84, wherein:

said backlight system is configured of said luminescent parts changing regions thereof in each frame; and

each of said luminescent parts is configured of one or a plurality of lighting systems adjacent to each other.

86. A liquid crystal display device according to Claim 84, wherein a phosphor layer is formed on said liquid crystal panel,

on the opposite side of said backlight system.

87. A liquid crystal display device according to Claim 84, wherein said phosphor layer is formed in an inner surface of said liquid crystal panel.

88. A liquid crystal display device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and liquid crystal cells are arranged at intersections of the signal lines and the scanning lines; and

a backlight system facing said liquid crystal panel, and wherein:

impulse driving in which said scanning lines are sequentially scanned while said backlight system is turned on and off, and said display data are written in said liquid crystal cells is carried out; and

said display data written in said liquid crystal cells within a predetermined time before and after said backlight system is turned off are estimated data generated by carrying out motion compensation, when said backlight system is turned on.

89. A liquid crystal display device according to Claim 88, wherein said motion compensation is carried out by using display data in a current frame and in another frame.

90. A method of controlling a liquid crystal display device, the device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of scanning lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the scanning lines via switching elements; and

a liquid crystal panel divided into first pixel regions and second pixel regions adjacent to the first pixel regions, the method comprising the steps of:

performing impulse driving for activating said control signals to be transmitted to each of said scanning lines two

times per one frame period in which an image is displayed;

writing said display data in said first pixel regions and writing said reset data in said second pixel regions respectively when said control signals are activated once of the two times; and

writing said reset data in said first pixel regions and writing said display data in said second pixel regions, when said control signals are activated the other time of the two times.

91. A liquid crystal display device controlling method according to Claim 90, further comprising the step of:

turning on backlights on the backside of said liquid crystal panel each facing said first pixel regions and said second pixel regions, respectively, in synchronization with writing said display data in said first pixel regions and in said second pixel regions; and

turning off each of said backlights in synchronization with writing reset data in said first pixel regions and in said second pixel regions.

92. A liquid crystal display device controlling method according to Claim 91, the device comprising said backlights being formed with fluorescent tubes, said device controlling method further comprising the steps of:

adjusting said one frame cycle in accordance with a cycle of an alternating current signal supplied to said fluorescent tubes; and

writing said display data in accordance with the peak of brightness of said fluorescent tubes.

93. A liquid crystal display device controlling method according to Claim 90, further comprising the steps of:

receiving said display data for two images per frame; and

deleting data corresponding to said first pixel regions and said second pixel regions for writing said reset data, of said display data.

94. A liquid crystal display device controlling method according to Claim 90, further comprising the steps of:

receiving said display data for one image per frame; and

writing a portion of said display data in said first pixel regions when said control signals are activated once of the two times, and writing the remaining display data in said second pixel regions when said control signals are activated the other time of the two times.

95. A liquid crystal display device controlling method according to Claim 90, the device having a hold driving function in which each of said control signals is activated once in one frame period and said display data are written in all said pixel electrodes, the method further comprising the step of

controlling switching between said hold driving and said impulse driving depending on an image to be displayed.

96. A liquid crystal display device controlling method according to Claim 95, further comprising the step of increasing brightness of a backlight arranged on a backside of said liquid crystal panel, having adjustable brightness, when said impulse driving is performed.

97. A liquid crystal display device controlling method according to Claim 95, further comprising the step of carrying out gamma correction during impulse driving and during said hold driving, wherein

said gamma correction is carried out more rapidly during said impulse driving than during said hold driving.

98. A liquid crystal display device controlling method according to Claim 90, further comprising the step of selecting said scanning lines according to an order said scanning lines are arranged in.

99. A liquid crystal display device controlling method according to Claim 90, further comprising the step of selecting the scanning lines according to a predetermined order which is not related to an order said scanning lines are arranged in.

100. A liquid crystal display device controlling method according to Claim 99, the device comprising said first pixel regions and said second pixel regions divided, including a

plurality of said scanning lines, further comprising the step of

selecting said scanning lines in said first pixel regions and in said second pixel regions according to the order said scanning lines are arranged in.

101. A method of controlling a liquid crystal display device, the device comprising a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements, the method comprising the step of

carrying out gamma correction in response to a temperature change of said liquid crystal panel.

102. A method of controlling a liquid crystal display device, the device comprising:

a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements;

a plurality of first backlights arranged on the backside of said liquid crystal panel, and separated from each other; and

a plurality of second backlights each adjacent to said first backlights but separated from each other, the method comprising the step of

alternately turning on and off said first backlights and said second backlights.

103. A method of controlling a liquid crystal display device comprising a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via

switching elements, the method comprising the step of

manually adjusting a luminescent period in which an image to be displayed in one frame period is output.

104. A method of controlling a liquid crystal display device comprising a liquid crystal panel in which a plurality of signal lines for transmitting display data and a plurality of control lines for transmitting control signals are laid out vertically and horizontally, and pixel electrodes are arranged at intersections of the signal lines and the control lines via switching elements, the method comprising the step of

adjusting a luminescent period in which an image to be displayed in one frame period is output in accordance with a speed of motion of an image displayed on said liquid crystal panel.

105. A method of controlling a liquid crystal display device, the device comprising:

a data driver for outputting display data to signal lines while a timing signal is active;

a gate driver for sequentially outputting gate pulses to scanning lines; and

a liquid crystal panel in which pixel electrodes are arranged at intersections of said signal lines and said scanning lines via switching elements, the method characterized in that said data driver outputs reset data during an inactive period of said timing signal in one horizontal period.

106. A liquid crystal display device controlling method according to Claim 105, wherein said gate driver writes said display data over said reset data after the reset data are written in said one horizontal period.

107. A liquid crystal display device controlling method according to Claim 105, wherein:

said active period of said timing signals is variable; and

a ratio of an output period of the display data to an output period of said reset data is adjusted arbitrarily.

108. A liquid crystal display device controlling method

according to Claim 105, wherein a voltage of said reset data transmitted to said signal lines is set to be equal to a center voltage of an AC power source generating said display data.

109. A liquid crystal display device controlling method according to Claim 105, wherein a voltage of said reset data transmitted to said signal lines is offset toward a positive side or negative side, by a predetermined value from said center voltage of an AC power source generating said display data.

110. A liquid crystal display device controlling method according to Claim 105, further comprising the steps of:

writing said display data in said pixel electrodes by sequentially outputting said gate pulses to said scanning lines; and

writing said reset data in said pixel electrodes by sequentially outputting said gate pulses to said scanning lines after a predetermined time has elapsed since writing said display data.

111. A liquid crystal display device controlling method according to Claim 110, further comprising the step of writing said reset data in the same scanning line a plurality of times in one frame period.

112. A liquid crystal display device controlling method according to Claim 110, further comprising the steps of:

sequentially scanning said scanning lines to write said reset data during a blanking period which is a period from scanning the last of said scanning lines for writing said display data, to end of said frame, and

writing the reset data always after a certain amount of time has elapsed since writing said display data in the same scanning lines.

113. A liquid crystal display device controlling method according to Claim 112, further comprising the step of writing said reset data in the same scanning lines after a time equivalent to 1/2 of a frame has elapsed since writing said display data.